

Control of algae invasion in creeping bentgrass, 2004.

Fungicides were evaluated for their ability to suppress algae invasion in creeping bentgrass. This trial was conducted at the NC State University Faculty Club Turfgrass Field Lab in Raleigh, NC on 'G-6' creeping bentgrass maintained under golf course putting green conditions. Mowing was performed 3 times weekly at a height of 0.156 in. with clippings collected, and the site was irrigated to prevent drought stress. Fertilizer was applied as 19-5-9 on 2 Feb (0.5 lb N/1000 sq ft) and 25 Mar (0.75 lb N/1000 sq ft) and as 25-5-15 on 4 Mar (1 lb N/1000 sq ft), 23 Apr (0.5 lb N/1000 sq ft), and 28 May (0.5 lb N/1000 sq ft). Insect pests were suppressed with Dursban Pro (1 fl oz/1000 sq ft) on 28 Apr and 28 Aug and Talstar (0.25 fl oz/1000 sq ft) on 15 May and 26 Jul. Plots were 3.33 ft x 6 ft and were arranged in a randomized complete block with four replications. Fungicides were applied in water equivalent to 2 gal per 1000 sq ft with a CO₂ powered sprayer at 40 psi using TeeJet 8004 nozzles. All treatments were initiated on 3 Jun and were reapplied at the appropriate intervals as indicated in the table. Percent turf area invaded by algal growth was assessed on 28 Jun, 21 Jul, 6 Aug, 11 Aug, 16 Aug, and 1 Sep. Data were subjected to analysis of variance and means separation by Waller-Duncan k-ratio t test (k=100).

Algae pressure was intermittent in 2004 due to moderate temperatures and precipitation that were favorable for creeping bentgrass growth. No significant differences were detected among treatments in June or July, except for ZeroTol (12 fl oz), which significantly increased algae invasion on 21 Jul compared to untreated plots. Algae invasion peaked on 6 Aug following 4.52 inches of rainfall over an 8 day period. On this date, Daconil Zn, Daconil Ultrex, Medallion (0.5 oz), Daconil Ultrex + Medallion, and Junction (2 and 4 oz) provided significant algae suppression compared to the untreated control. Algae invasion declined over the subsequent 5 days, and in addition to the above treatments, Medallion (0.25 and 0.33 oz) and ZeroTol (6 fl oz) exhibited significantly less algae invasion on 11 Aug than untreated plots. Only Daconil Ultrex, Daconil Ultrex + Medallion, and Junction provided significant algae control on 16 Aug. Fore (6 oz) did not provide significant suppression of algae on any rating dates during 2004.

Treatment and rate / 1000 sq ft	Spray interval (days)	Algae invasion (%)					
		28 Jun	21 Jul	6 Aug	11 Aug	16 Aug	1 Sep
Daconil Zn 4.17F 5 fl oz.....	14 ^z	9 a ^y	0 b	3 de	1 c	7 bcd	16 ab
Daconil Ultrex 82.5WDG 3.2 oz.....	14	6 a	0 b	1 e	1 c	4 cd	5 b
Medallion 50WG 0.25 oz.....	14	4 a	4 b	16 abc	4 c	8 bcd	6 b
Medallion 50WG 0.33 oz.....	14	3 a	1 b	17 ab	5 c	7 bcd	7 ab
Medallion 50WG 0.5 oz.....	14	7 a	3 b	12 b-e	3 c	14 abc	16 ab
Daconil Ultrex 82.5WDG 2.4 oz + Medallion 50WP 0.25 oz.....	14	5 a	0 b	5 cde	0 c	3 cd	16 ab
ZeroTol 27F 6 fl oz.....	7	5 a	6 b	14 a-d	7 c	10 bcd	7 ab
ZeroTol 27F 12 fl oz.....	7	12 a	14 a	24 a	24 a	23 a	21 a
Junction 61DF 2 oz.....	14	12 a	0 b	4 de	0 c	2 cd	5 b
Junction 61DF 4 oz.....	14	1 a	0 b	0 e	0 c	1 d	5 b
Fore 80WP 6 oz.....	14	12 a	5 b	17 ab	14 b	22 a	17 ab
Untreated Control.....	--	13 a	5 b	23 a	14 b	15 ab	16 ab

^zFungicides were applied on 3 Jun (all treatments), 10 Jun (7 day treatments), 17 Jun (7 and 14 day treatments), 24 Jun (7 day treatments), 1 Jul (all treatments), 8 Jul (7 day treatments), 15 Jul (7 and 14 day treatments), 22 Jul (7 day treatments), 29 Jul (7 and 14 day treatments), and 5 Aug (7 day treatments).

^yValues are means of four replicates. Means within columns followed by the same letter are not significantly different according to Waller-Duncan k-ratio t-test (k=100).